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TITLE : FORMED HYDROUS GEL CONTAINING IMMOBILIZED MICROORGANISM

ABSTRACT : PURPOSE: To prepare the subject formed hydrous gel having high strength and excellent water-resistance and useful for bioreactor, carrier for waste water treatment, water-retaining material, cold reserving material, etc., by the post- modification of a specific amount of hydroxyl group of a polyvinyl alcohol used as a raw material.

CONSTITUTION: This formed hydrous gel is produced by washing a polyvinyl alcohol used as a raw material with warm water of 40°C for about 1 hr, adding to a polyvinyl alcohol to get a polyvinyl alcohol concentration of 16%, dissolving the alcohol by stirring in an autoclave at 120°C for 30min, allowing the solution to cool to the room temperature, adding microorganisms (e.g. activated sludge bacteria) and sodium alginate to the obtained aqueous solution of polyvinyl alcohol, thoroughly stirring the mixture, dropping the obtained solution into a calcium chloride solution to obtain gelled spherical product, separating the product, adding to an aqueous solution containing an aldehyde-containing compound (e.g. formalin) and an acid (e.g. sulfuric acid) and acetalizing 2-50mol% of the hydroxyl group of the polyvinyl alcohol at 10-60°C.

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